



Volunteer Lake Assessment Program Individual Lake Reports

SILVER LAKE, HARRISVILLE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,408	Max. Depth (m):	26.2	Flushing Rate (yr ⁻¹)	0.2
Surface Area (Ac.):	333	Mean Depth (m):	10.4	P Retention Coef:	0.79
Shore Length (m):	7,400	Volume (m ³):	13,878,500	Elevation (ft):	1319

TROPHIC CLASSIFICATION

Year	Trophic class
1990	OLIGOTROPHIC
1998	OLIGOTROPHIC

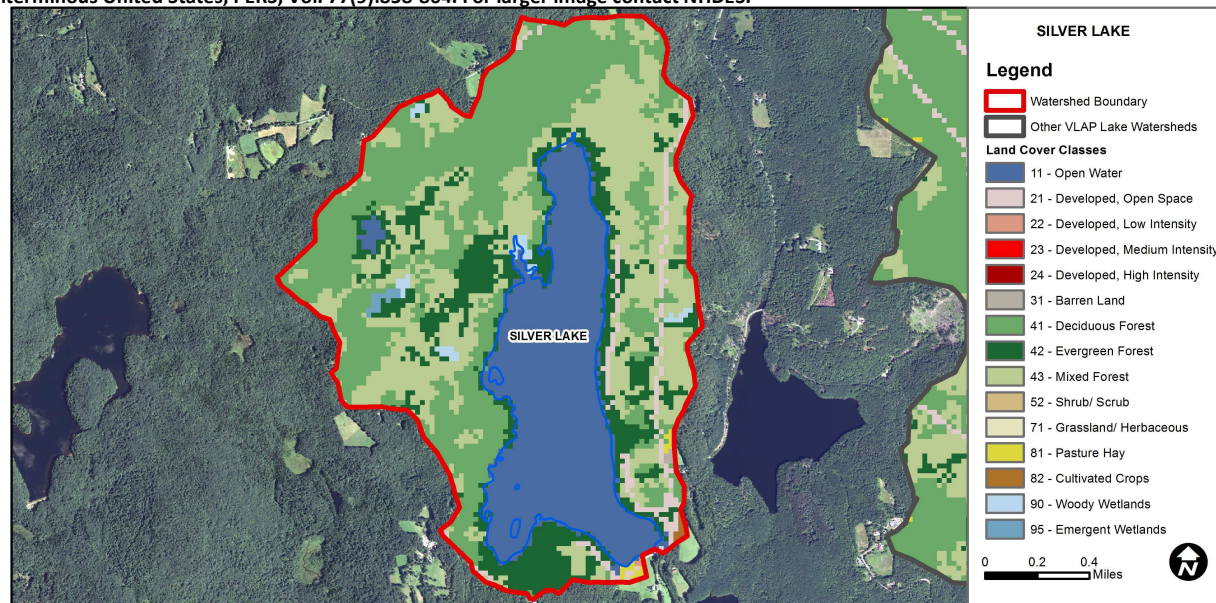
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Very Good	There are a total of at least 10 samples with 0 exceedances of criteria.
	Dissolved oxygen saturation	Very Good	There are a total of at least 10 samples with 0 exceedances of criteria.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	23.7	Barren Land	0.07	Grassland/Herbaceous	0
Developed-Open Space	2.88	Deciduous Forest	31.44	Pasture Hay	0.29
Developed-Low Intensity	0.03	Evergreen Forest	14.02	Cultivated Crops	0.15
Developed-Medium Intensity	0	Mixed Forest	26.37	Woody Wetlands	0.76
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0.26



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

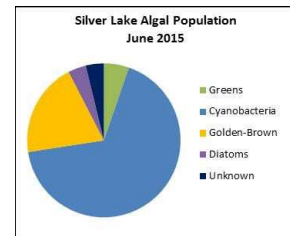
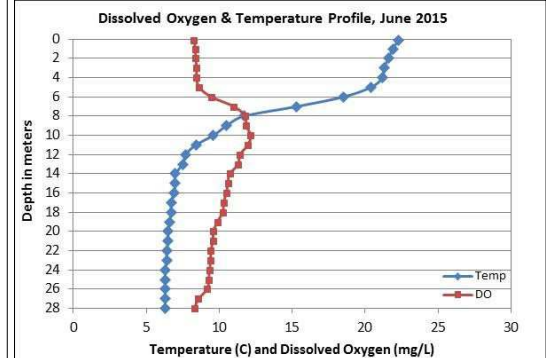
SILVER LAKE, HARRISVILLE

2015 DATA SUMMARY

RECOMMENDED ACTIONS: Lake water quality was very good in 2015 and representative of Oligotrophic, or high quality water, conditions. Low tributary flows likely contributed to above average phosphorus and turbidity in Sucker Brook and Sandy Beach Inlet 1. Continue implementing stormwater best practices throughout the watershed and keep up the great work!

OBSERVATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- **CHLOROPHYLL-A:** Chlorophyll levels decreased slightly from June to July and then increased slightly from July to August but remained at low levels. The 2015 average chlorophyll level decreased from 2014 and was the lowest measured since monitoring began. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity levels remained stable and low and were less than the state median. Historical trend analysis indicates significantly decreasing (improving) epilimnetic (upper water layer) conductivity since monitoring began.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels remained stable and low from June through August. Average epilimnetic phosphorus remained stable from 2014 and was much less than the state median. Historical trend analysis indicates highly variable epilimnetic phosphorus since monitoring began however phosphorus levels have remained fairly stable since 2002. Eastside Inlet, Lead Mine Inlet 1 and 2 and Outlet phosphorus levels were low. Sandy Beach Inlet 1 phosphorus levels were slightly elevated in July and August likely due to low flow conditions. Sucker Brook phosphorus levels were average in June and elevated in July and August also due to low flows and wetland influences.
- **TRANSPARENCY:** Transparency measured without the viewscope (NVS) was lower in June and then increased (improved) as the summer progressed. Average NVS transparency improved from 2014 and was much higher than (better than) the state median. Historical trend analysis indicates relatively stable transparency with moderate variability between years. Transparency measured with the viewscope (VS) was generally much higher than that measured without and likely a better representation of actual conditions.
- **TURBIDITY:** Epilimnetic and Metalimnetic (middle water layer) turbidities remained stable and low. Hypolimnetic (lower water layer) turbidity was low in June and July and was slightly elevated in August. Lead Mine Inlet 2 and Sandy Beach Inlet 1 turbidities were low. Lead Mine Inlet 1 turbidity was slightly above average on each sampling event. Eastside Inlet and Outlet turbidities were slightly elevated in July. Sucker Brook turbidities were elevated on each sampling event, particularly in July. Low flow conditions and highly colored water may have contributed to elevated turbidities.
- **pH:** Epilimnetic and Metalimnetic pH fluctuated below the desirable range 6.5-8.0 units. Average epilimnetic pH was less than desirable and historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years. Hypolimnetic, Eastside Inlet, Lead Mine Inlet 1 and 2, and Sucker Brook pH levels were less than desirable and slightly acidic. Outlet and Sandy Beach Inlet 1 pH levels fluctuated above and below the desirable range.



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: > 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: between 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

Station Name	Table 1. 2015 Average Water Quality Data for SILVER LAKE							pH
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	
					NVS	VS		
Epilimnion	2.3	1.05	24.4	3	8.72	10.93	0.48	6.27
Metalimnion			23.8	4			0.70	6.54
Hypolimnion			25.0	6			0.84	5.97
Eastside Inlet			26.0	6			1.01	5.79
Lead Mine Inlet 1			30.6	6			1.14	6.33
Lead Mine Inlet 2			15.8	4			0.19	6.02
Outlet In Stream			27.5	3			0.68	6.52
Sandy Bch Inlet 1			35.8	18			0.75	6.62
Sucker Brook			16.7	35			3.40	6.00

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Improving	Data significantly decreasing.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.

